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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/836,148	04/16/2001	Benjamin F. Cravatt	SCRIP1210-4	8213

7590 03/30/2004

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EXAMINER

TRAN, MY CHAU T

ART UNIT PAPER NUMBER

1639

DATE MAILED: 03/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/836,148

Applicant(s)

CRAVATT ET AL.

Examiner

MY-CHAU T TRAN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) 4 and 7-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5 and 6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

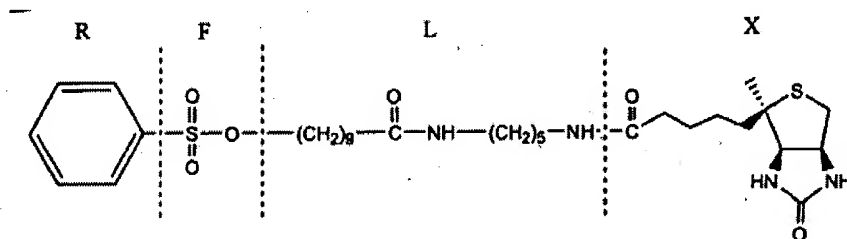
- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/2/03 & 1/12/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION*Status of Claims*

1. Applicant's amendment filed 1/12/04 is acknowledged and entered. Claim 1 has been amended.
2. Claims 1-15 are pending.
3. This application is a continuation of 09/738,954 filed 12/15/2000, which claims priority to three provisional applications that are 60/195,954 filed 4/10/2000, 60/212,891 filed 6/20/2000, and 60/222,532 filed 8/2/2000.
4. Claims 7-15 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected inventions, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper filed 5/30/03.
5. Applicant has elected the following species for the elected invention (Claims 1-6):



Wherein "R" = phenyl; "F" = sulfonyl; "L" = N-(5-pentylamine)-decanamide; and "X" = biotin.

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6. Claim 4 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species (e.g. "R" is pyridyl), there being no allowable generic or linking claim. Election was made **without** traverse in Paper filed 5/30/03.

Drawings

7. The drawings were received on 1/12/04. These drawings are acceptable.

Specification

8. In view of applicant's amendments of the specification, the previous objection has been withdrawn.

Response to Amendment

9. The declaration under 37 CFR 1.132 filed 1/12/04 is insufficient to overcome the rejection of claims 1-2, and 5-6 based upon the rejection under 35 USC 103(a) as obvious over Gygi et al. (*Nature Biotechnology*, **1999**, 17(10):994-999) and Liu et al. (*PNAS*, **1999**, 96(26): 14694-14699) as set forth in the last Office action because:

Applicant refers to an affidavit or declaration filed in the parent application (09/738,954). Affidavits or declarations, such as those submitted under 37 CFR 1.131 and 37 CFR 1.132, filed during the prosecution of the parent application do not automatically become a part of this application. Where it is desired to rely on an earlier filed affidavit or declaration, the applicant should make the remarks of record in the later application and include a copy of the original affidavit or declaration filed in the parent application.

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10. Claims 1-3, and 5-6 are treated on the merit in this Office Action.

Withdrawn Rejections

11. In view of applicant's arguments, the previous rejection under 35 USC 112, first paragraph (written description) has been withdrawn.

12. In view of applicant's arguments, the previous rejections under 35 USC 112, second paragraph, have been withdrawn.

13. In view of applicant's arguments, the rejection of claims 1-2 and 5-6 under 35 USC 103(a) as obvious over Gygi et al. (*Nature Biotechnology*, 1999, 17(10):994-999) and Liu et al. (*PNAS*, 1999, 96(26): 14694-14699) has been considered but are moot in view of the new ground(s) of rejection.

New Rejections

Claim Rejections - 35 USC § 112

14. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

15. Claims 1-3, and 5-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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The combining step of claim 1 is vague and indefinite because the claimed method step is confusing. As written, the claimed method step is a convoluted step of three distinct method steps as disclosed in the specification on page 28, paragraph [0104]. That is the proteomic mixture is separated into two portions wherein one portion is treated with inactivating conditions (e.g. non-covalent agent). Then each portion is combined with probe. The probe is allowed to react with the target proteins.

16. Claims 1-3, and 5-6 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: the addition of the candidate compound to the sample and its reaction with the target proteins. It is unclear as to the correlation between the "bioactivity of the candidate compound with the target proteins" and that of the reaction between the target proteins and the probes. That is how is the reaction between the target proteins and the probes extrapolated to be the reaction between the candidate compound with the target proteins.

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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18. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

19. Claims 1-2 and 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chait et al. (US Patent 6,391,649 B1) and Liu et al. (*PNAS*, 1999, 96(26): 14694-14699).

It is interpreted that the "candidate compound" is synonymous to the "probe" in the presently claimed method.

The presently claimed screening method comprises the steps of a) separating the proteomic mixture into two portions; b) treating one portion of the proteomic mixture with a non-covalent agent; b) combining the two portions with a probe; c) allowing the probe with the target proteins; d) sequestering the proteins conjugated with the probe; e) determining the sequestered proteins; f) quantitative the amount of sequestered proteins.

Chait et al. disclosed a method for accurately comparing the levels of cellular components, such as proteins, present in samples, which differ in some respect from each other using mass spectroscopy and isotopic labeling (Abstract). The method comprises of the following steps: 1) Two cell pools are prepared. One of the cell pools, here Cell Pool 1, contains a cell culture grown or maintained in a medium containing a natural abundance of isotopes. The

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other cell pool contains a cell culture grown or maintained in a medium in which one or more isotopes of nitrogen, carbon, oxygen or sulfur, for example, is not present in a natural abundance.

2) All or portions of the cell pools are then combined. 3) The proteins are extracted from the combined cell pool in a manner known in the art such as digestion. 4) The mixture of proteins is then separated into the individual proteins or small groups of proteins, also by known techniques, such as affinity binding. 5) The separated proteins are then preferably digested into peptides. 6) The proteins or digested proteins are then subjected to mass spectroscopy.

The method of Chait et al. does not expressly include that the probe is fluorophosphonyl and the target proteins are serine hydrolases.

Liu et al. disclosed a method of activity-based protein profiling using an active site directed probe (Abstract). The probe is a biotinylated fluorophosphonate, FP-biotin, (pg. 14694, left col., lines 30-33). The method steps of reacting protein samples (proteomic mixture) with FP-biotin (activity-based probe) include combining FP-biotin mixture with the protein samples and detecting the FP-biotin-reactive proteins by SDS/PAGE-Western Blotting (pg. 14695, right col., lines 26-64). The FP-biotin-reactive proteins are further analyzed by MALDI mass spectrometry (pg. 14696, left col., lines 11-15). FP-biotin can react with numerous serine hydrolyses (target enzyme) in crude cell and tissue samples (pg. 14698, left col., lines 1-8).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to include that the probe is fluorophosphonyl and the target proteins are serine hydrolases as taught by Liu et al. in the method of Chait et al. One of ordinary skill in the art would have been motivated to include that the probe is fluorophosphonyl and the target proteins are serine hydrolases in the method of Chait et al. for the advantage of providing a probe

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that is specific for profiling in a single class of proteins (Liu: pg. 14694, lines 30-33) since both Chait et al. and Liu et al. disclose method of detecting proteins from a crude cell samples (Chait: col.; Liu: pg. 14698, left col., lines 1-8).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MY-CHAU T TRAN whose telephone number is 571-272-0810. The examiner can normally be reached on Mon.: 8:00-2:30; Tues.-Thurs.: 7:30-5:00; Fri.: 8:00-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ANDREW WANG can be reached on 571-272-0811. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

mct
March 26, 2004


PADMASHRI PONNALURI
PRIMARY EXAMINER